

**ABSTRACT**

A method and apparatus are provided for processing solid materials in general, and of dental material in particular, which involves applying radiation from a laser or other suitable pulsed radiation source to process and to preferably ablate the material in a region of processing thereof. Particles of ablation are generated by the radiation from the area of processing and/or other source(s) which are directed to the area of processing to further process the material. Particles adhering to a tip through which the radiation is applied, to a reflector or other surfaces adjacent the region of processing at the end of each radiation pulse may be ablated and accelerated back to the region of processing by the next pulse. Ablation particles may also be obtained from the ablation of the tip, from a strip of material through which radiation passes before reaching the region of processing or from other sources. Mechanism may also be provided for cooling the surface of the material in the region of processing between radiation pulses and/or during such pulses and/or for facilitating removal of particles in the area between the chip and the region of processing between radiation pulses.